REMARKS

Reconsideration of this application is requested.

A complete copy of the claims showing the changes made to the above-identified claims is attached hereto.

As a result of the foregoing amendments, a total of 54 claims remain in the present application. Claims 6, 9, 14, 15, 21, 26, 29, 35, 41, 47 and 51 have been amended. No new claims have been introduced. Claims 1-5, 7-9, 10-13, 16-20, 22-25, 27-28, 30-34, 36-40, 42-46, 48-50 and 52-54 remain unchanged.

The foregoing amendments are presented in order to place the claims into better condition for appeal. Referring now to the text of the Office Action:

(a) The Examiner has rejected Applicant's arguments presented in the amendment filed on August 21, 2002;

(b) The Examiner has objected to the amendment filed on August 21, 2002 under 35 USC § 132 on the ground that it introduces new subject matter;

(c) The Examiner has maintained his earlier rejection of claims 1-2, 21-22 and 41-42 stand rejected under 35 U.S.C. § 102(b), as being anticipated by United States Patent No. 5,636,230 (Marturano et al.);

(d) The Examiner has maintained his earlier rejection of claims 3-18, 23-38, and 43-52 also stand rejected in view of Marturano, but has not specified the grounds of such rejection. Specifically, the Examiner has not indicated whether or not his rejection is under 35 U.S.C. § 102 or § 103; and

(e) The Examiner has indicated allowable subject matter in respect of claims 19-20, 39-40, 53-54.

Such rejections are respectfully traversed, based on the discussion below.

The Examiner's rejection of Applicant's arguments presented in the amendment filed on August 21, 2002

In paragraph 1 of the Detailed Action, the Examiner has rejected applicant's argument that Marturano el al teach "following suspension of resend request messages, the transmitting unit 101 continues to transmit data bocks". The Examiner contends instead that "... no where in the Marturano et al reference that cited the transmitting unit continues to transmit data block, following the temporarily suspend [sic] the transmission of resend request messages." For the reasons set forth below, this interpretation of the Marturano et al reference cannot be supported by its disclosure, and the claim rejections based thereon cannot be sustained as a matter of law. For example, the Marturano et al reference recites:

> "...Note that re-enablement of resend requests may be determined at any time during message reception. For example, once resend requests are disabled, it may be desirable to re-enable them if N portions are received correctly in a row." (Col. 4, line 66 - Col. 5, line 3)

It is self-evident that N portions of a data message cannot be received in a row, and the receiving unit cannot detect whether or not "N portions are received correctly in a row", unless the transmitting unit has sent them.

> "... Alternatively, this determination could be based on improving RSSI, improving signal-to-noise, or any combination of the above." (Col 5, lines 7-9)

It is also self-evident that " RSSI, improving signal-to-noise, or any combination of the above" cannot be detected unless the receiving unit has received data blocks upon which these parameters can be calculated. Again, the receiving unit cannot possibly have received the required data blocks, unless the transmitting unit has sent them.

For greater certainty, Marturano et al explicitly teach that transmission errors are calculated on the basis of received data blocks. Thus:

> "A error control code, as known in the art, is added to, and considered a part of, each data block (111-112), thus allowing the receiving data units (102-103) to detect errors induced during transmission..." (Col 3, lines 1-4)

Furthermore, Marturano explicitly teach that bit errors, RSSI and S/N are calculated on the basis of received data blocks. Thus:

> Using this and possibly other measures, the receiving data units (102-103) can identify blocks that were inadequately received. Any of a number of indices may be used for this purpose. For example, a block may be deemed inadequately received if the number of bit errors in a data block exceeds a predetermined threshold, e.g., 1 error. As another example, reliability may be measured in an RF environment by received signal strength. In this case, a block may be deemed inadequately received if the received signal strength indicator (RSSI) falls below the predetermined threshold, e.g., -95 dBm, over a data block. In yet another example, a signal-to-noise (S/N) measurement over a data block, when less than a threshold of 10 dB for instance, may be used to indicate inadequate reception. (Col 4, lines 6-19, emphasis added)

Thus it is clear that Marturano et al. explicitly teach that receiving units 102-103 determine link performance (in the form of RSSI, signal to noise, and bit errors etc.) on the basis of received data blocks. By definition, these received data blocks must necessarily have been sent by the transmitting unit 101.

As detailed above, Marturano et al explicitly and unambiguously teach that resend request messaging is re-enabled on the basis of signal parameters (errored blocks, RSSI, S/N etc.) which are calculated on the basis of received data blocks. It is plainly obvious that this functionality is utterly impossible unless the transmitting unit 101 continues to transmit data blocks 111-112 following suspension of resend requests by a receiving unit 102-103.

Based on the foregoing, it is plainly obvious that that Marturano et al explicitly and unambiguously teach that the transmitting unit 101 continues to transmit data blocks 111-112 following suspension of resend requests by a receiving unit 102-103. This is diametrically opposed to the Examiners interpretation of Marturano et al. Furthermore, the person of ordinary skill in the art will immediately appreciate that interruption of data transmission from the transmitting unit 101, as suggested by the Examiner, is technologically non-viable, at least because it destroys the operation of the Marturano et al system by preventing re-enablement of resend requests.

For still greater certainty, Marturano et al. explicitly teach that a data message is transmitted from the transmitting unit 101 for (substantially simultaneous) reception by a multiplicity of receiving units 102-103. Thus:

> "Generally, the present invention provides a method for communicating information in a broadcast data communication system." (Col. 2, lines 21-23)
>
> "In a broadcast communications system, data messages are transmitted from one transmitting data unit to a multiplicity of receiving data units." (Col. 2, lines 50-52)
>
> "... the first data unit (101) is transmitting a data message (110), comprising N data blocks (111-112), to the receiving data units (102-103)." (Col. 2, lines 44-46)

As is well known in the art, a resend request message from any receiving unit normally causes the transmitting unit to resend the involved data block. Thus:

> "In the event that uncorrectable errors are detected, the receiver responds with a negative acknowledgment (NACK) indicating that the packet contained uncorrectable errors. Upon reception of a NACK, the transmitter may resend the block or blocks corresponding to the NACK." (Col. 1, lines 32-37)

Because the transmitting unit is operating in a broadcast communications system, the resending of a data block in response to a NACK message from one receiver necessarily means that all receiving units will receive the re-sent data block. However, in most cases, the majority of the receivers will have correctly received the data block on the first transmission attempt, so that further re-sends of the involved data block is redundant and merely serves to degrade system performance. Thus:

> "... Those receivers having poor channel quality may require a large, perhaps indefinite, number of re-transmissions in order to correctly receive the data. Since a broadcast transmitter typically delays transmission of further data during the re-transmission of previous data, such receivers can add significantly to the transmission time of the entire data message, thus reducing overall efficiency of the system. (Col.1 lines 47-54)

And:

> "... a potentially very small percentage of the receiving data units experiencing poor signal conditions can force the maximum number of resends for each transmitted data block, even though the majority of receiving data units have correctly received each data block on the first transmission attempt. In these cases, the resend requests typically do not benefit the receiving data units in question, but only serve to increase the time required to transmit the data message." (Col 5, lines 47-54)

Based on the foregoing, it is plainly obvious that the system of Marturano et al would yield no benefit whatsoever, unless the transmitting unit 101 continues to transmit data blocks 111-112 following suspension of resend requests by a receiving unit 102-103 suffering from poor channel performance.

In light of the foregoing, the person of ordinary skill in the art will immediately appreciate that interruption of data transmission from the transmitting unit 101, as suggested by the Examiner, would destroy not only the operation of the Marturano et al system (by preventing re-enablement of resend requests) but also destroys any benefits that might be obtained by the teaching of Marturano et al. It is therefore believed that the Examiner's characterization of Marturano et al. is diametrically opposed to the teaching of Marturano et al., is not viable technologically, and fails to provide a proper basis for rejecting claims of the present application.

Applicant reaffirms that Marturano et al. clearly and unambiguously teach that the transmitting unit 101 continues to transmit data blocks 111-112 following suspension of resend requests by a receiving unit102-103.

Favorable reconsideration of the Applicant's arguments presented in the Response dated August 21, 2002, is therefore believed to be in order, and such action is courteously solicited.

New Matter Objection

The Examiner has objected to the amendment filed on August 21, 2002 under 35 USC § 132 on the ground that it introduces new subject matter. In particular, the Examiner alleges: "The added material which is not supported by the original disclosure is as follows: limitation 'bi-directional'.

The Examiner's assertion is not supported by the facts. In the amendment filed on August 21, 2002, applicant amended claim 1 to define that "each wireless terminal is adapted for bi-directional communication with the base station through a respective bi-directional wireless communication link", and bi-directional data transmission is at least temporarily interrupted over a poorly performing wireless link (underlining added). This subject matter is clearly and unambiguously supported by the originally filed specification. In particular, referring to the originally filed application text:

> "... the present invention provides a base station of a wireless data communications network, the base station being adapted for bi-directional communications with each of one or more wireless terminals over respective wireless links..." (Page 5, lines 6-10, emphasis added)
>
> "Bi-directional data traffic between a base station 4 and a wireless terminal 6 within its respective cell 8 is handled by respective up-link and down-link paths of wireless data communications link 10." (Page 8, lines 11-14, emphasis added)

Thus the originally filed specification text clearly and unambiguously supports the limitation that "each wireless terminal is adapted for bi-directional communication with the base station through a respective bi-directional wireless communication link".

Furthermore, at page 15, lines 10 – 23 of the specification:

> "Returning now to Fig. 2, if it is determined at step S4 that the current frame has either failed (or is certain to fail) the applicable QOS requirements, then the current frame is dropped (step S5). In the case of a frame being transmitted by a wireless terminal 6 over an up-link path, dropping a frame can be accomplished by flushing data of the frame (or portion thereof) from buffers of the base station, and sending a control message to the corresponding wireless terminal 6 to terminate transmission of data of the dropped frame. In the case of a frame being transmitted to a wireless terminal 6 over a down-link path, dropping a frame can be accomplished by sending a control message to the wireless terminal 6 indicating that the frame has been dropped." (Page 15, line 10-23

Thus the originally filed specification clearly and unambiguously teaches that when a poorly performing link is identified, data transmission through both the uplink and downlink paths of the poorly performing link is interrupted (by suspending or dropping frames). As such,

it is submitted that, although the specific words are not used in the specification, the person of ordinary skill in the art will immediately recognize that this passage teaches "... interrupting bi-directional data transmission over the poorly performing wireless link", as required by the amended claims.

In light of the foregoing, it is submitted that the amendment filed on August 20, 2002 does not introduce new subject matter, and is in full compliance with 35 USC § 132. Accordingly, withdrawal of the Examiner's objection is believed to be in order, and such action is courteously solicited.

Claim Rejections - 35 U.S.C. § 102(b)

The Examiner has re-iterated his rejection of claims 1-2, 21-22 and 41-42 under 35 U.S.C. § 102(b), as being anticipated by United States Patent No. 5,636,230 (Marturano et al.)

With reference to claims 1, 21 and 41, the Examiner asserts that: "Marturano et al. disclosed a base station (FIG. 1/no. 102-103, col 2/ ,ln 49) being adapted for bi-directional communications with one of more wireless terminals (FIG. 1/no. 101, col 2/ ,ln 47) over a respective bi-directional wireless communications links wherein the base station identify [sic] a poorly performing link and temporarily interrupting data transmission over the poorly performing wireless link (abstract, col. 2/ln. 58-col. 4/ln.15)."

Applicant disagrees with the Examiner's characterization of Marturano et al. In particular, Marturano et al do not teach, suggest, or even remotely contemplate temporary interruption of data transmission. In particular, and in addition to Applicant's arguments above and in the Response dated August 21, 2002, Marturano et al. clearly distinguish between data transmission, and the sending of resend request (NACK) messages. Thus:

> "... the first data unit 101 is transmitting a data message 110, comprising N data blocks 111-112, to the receiving data units 102-103" (Col 2, lines 44-46)

And:

> "Once identified by the receiving data units 102-103, inadequately received data blocks cause a resend request (i.e. a NACK) to be sent to the transmitting data unit 101." (Col. 3, lines 20-23)

Throughout the text and figures of United States Patent No. 5,636,230, Marturano et al are completely consistent in their use of language: "data messages" are transmitted from the transmitting unit 101 to the receiving units 102-103, while resend requests are sent from the receiving units 102-103 to the transmitting unit 101.

Marturano et al teach that if channel performance is poor (as evidenced by the number of resend requests sent by a receiving unit), then the involved receiving unit can temporarily suspend the sending of further resend requests. Marturano et al. do not teach, suggest, or even remotely contemplate interrupting data transmission, much less "bi-directional data transmission ", as required by claim 1. Instead, Marturano et al merely interrupt resend requests from a receiving unit operating in a poor RF environment. No attempt is made by Marturano et al to interrupt transmission of data messages 110 or data blocks 111-112 from the transmitting unit 101. As discussed in detail above, such function would destroy any benefits that might be obtained by the teaching of Marturano et al.

Thus it will be clear that Marturano et al do not teach, suggest or even remotely contemplate all of the features of the present invention, as defined in any of claims 1, 21 and 41. As such these claims cannot be anticipated by the teaching of Marturano et al. Furthermore, Marturano et al provide no teaching, suggestion or motivation for modifying the Marturano system in the manner suggested by the Examiner (that is, controlling the transmitting unit 101 to interrupt transmission of data blocks). As discussed in detail above, such modification destroys any benefits that might be obtained by the teaching of Marturano et al. Accordingly, the teaching of Marturano et al. is insufficient to support a rejection of any claims under 35 USC § 103.

None of the known prior art teaches or suggests the missing subject matter. Accordingly, it is submitted that the present invention as defined in amended claims 1, 21 and 41 is clearly distinguishable over the prior art of record, and is patentable. The dependent claims 2-20, 22-40 and 42-54 are believed to define further patentable subject matter.

In light of the foregoing, it is submitted that the presently claimed invention is clearly and unambiguously distinguishable over the teachings of the cited references. Accordingly, it is believed that the present application is in condition for allowance, and early action in that respect is now courteously solicited.

If any extension of time under 37 C.F.R. § 1,136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 19-5113.

Respectfully submitted,

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